



**Department of Energy**  
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QA: N/A

SEP 27 2002

**OVERNIGHT MAIL**

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**TRANSMITTAL OF REPORT ADDRESSING KEY TECHNICAL ISSUE (KTI) ITEMS  
EVOLUTION OF THE NEAR-FIELD ENVIRONMENT (ENFE) 2.07 AND 2.08**

This letter transmits a report entitled *Agreements ENFE 2.07 and 2.08* which satisfies the subject KTI agreements. These KTI agreements are as follows:

ENFE 2.07: "Identify specific coupling relationships that are included and excluded from TSPA, including Onsager couples, and give technical bases for their inclusion or exclusion.

DOE will identify specific coupling relationships that are included and excluded from TSPA, including Onsager couples, and give the technical basis for inclusion and exclusion. This information will be documented in a revision to the *Engineered Barrier System Degradation, Flow, and Transport PMR* (TDR-EBS-MD-000006) expected to be available September 2001."

ENFE 2.08: "Provide stronger technical basis for the suppression of individual minerals predicted by equilibrium models.

DOE will provide additional technical basis for suppression of individual minerals predicted by equilibrium models, in a revision to the *Engineered Barrier System: Physical and Chemical Environment Model* (ANL-EBS-MD-000033) expected to be available in FY02."

NM55 07  
WM 11

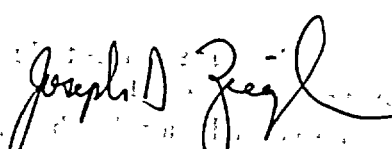
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Agreement Item ENFE 2.07 concerns the coupling effects of the near-field chemical environment within the Engineered Barrier System. A Process Model Report (PMR) was planned to document the information about the various coupling effects. As a result of programmatic changes, PMRs are no longer being developed. Instead, the information needed to satisfy the KTI Agreement Item ENFE 2.07 is provided in this enclosure. The enclosure presents the technical bases for considering the near-field environmental coupling aspects used in Total System Performance Assessment models. Agreement Item ENFE 2.08 concerns the technical bases for the suppression of different minerals that the equilibrium models predict. The enclosure provides a detailed description of the process based on the new version of EQ3/6 (version 8). The geochemical modeling methodology is described to provide the technical basis for the inclusion or exclusion of minerals. The primary reaction path equilibrium model that will be used in the revision to the physical and chemical environment model is developed in the in-drift precipitates/salts model. These models focus on the suppression or inclusion of minerals in the engineered barrier system. The material presented in the enclosure directly addresses the KTI agreement items ENFE 2.07 and 2.08.

The contents of this transmittal were discussed with your staff on September 11 and September 26, 2002, who indicated that ENFE 2.07 should also address the impacts of coupled processes on waste package corrosion. However, consistent with the topical area of ENFE KTI Subissue 2, U.S. Department of Energy (DOE) considers the original scope of both ENFE 2.07 and 2.08 to be related only to the effects of coupled thermal-hydrological-chemical processes on the waste package chemical environment, which is fully addressed by the enclosure. The impacts of the coupled processes, such as corrosion, should be addressed in the appropriate KTI of those processes, such as the Container Life and Source Term KTI for waste package corrosion. Therefore, DOE believes that ENFE 2.07 and 2.8 should be closed.

There are no new regulatory commitments in the body or the enclosure to this letter. Please direct any questions concerning this letter and its enclosure to Timothy C. Gunter at (702) 794-1343 or Deborah L. Barr at (702) 794-1479.

OL&amp;RC:TCG-1821

  
Joseph D. Ziegler, Acting Assistant Manager  
Office of Licensing & Regulatory Compliance

Enclosure:

*Agreements ENFE 2.07 and 2.08*

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cc w/encl:

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